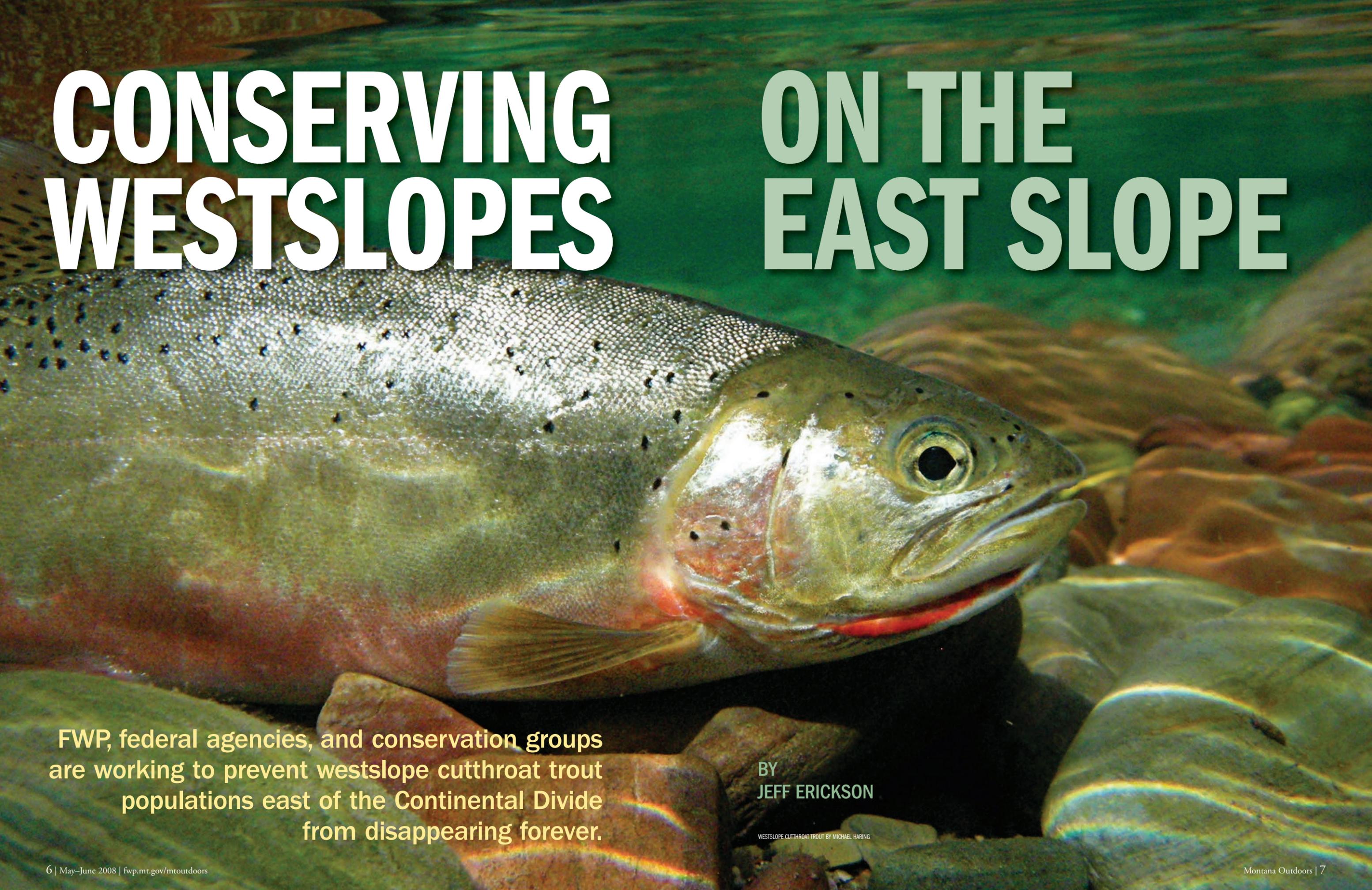


CONSERVING WESTSLOPES

ON THE EAST SLOPE



FWP, federal agencies, and conservation groups are working to prevent westslope cutthroat trout populations east of the Continental Divide from disappearing forever.

BY
JEFF ERICKSON

WESTSLOPE CUTTHROAT TROUT BY MICHAEL HARING

The bright morning sun filtering through ponderosa pines sparkles off the riffles of Muskrat Creek as the stream twists down from the Elkhorn Mountains. Two Montana Fish, Wildlife & Parks fisheries biologists, Lee Nelson and Dave Moser, watch a survey crew work a creek segment with an electric probe, nets, and bucket. Each burst of electricity from the probe temporarily stuns trout, causing them to float to the surface. Crew members carefully net, count, and measure the fish before returning them to the stream.

As expected, the crew finds numerous westslope cutthroat. But along with the native species are several brook trout, an unwelcome non-native. For Nelson and Moser, who work exclusively on westslope cutthroat east of the Continental Divide, the presence of brookies means a management setback. For seven years, FWP crews had worked to eliminate brook trout from this 1.3-mile section of Muskrat Creek, about 30 miles south of Helena. Native east of the Mississippi River, brookies were stocked in the early 20th century throughout the West. Since then, the aggressive species has crowded out native cutthroat. On other cutthroat waters, rainbow and Yellowstone cutthroat trout hybridize with westslopes and dilute their genetic integrity. “For the most part, poor habitat isn’t the main problem for westslopes in this area,” says Moser. “It’s exotics like brook and rainbow trout.”

Most cutthroat restoration money and efforts by FWP, federal agencies, and cold-water conservation groups such as Trout Unlimited (TU) have gone to fisheries west of the Continental Divide. There the primary challenge is to maintain and restore healthy populations on rivers such as the Flathead and Clark Fork. Despite the species’ misleading name, westslope cutthroat trout are also indigenous to the other side of the hill, and are also in peril. The challenge there is to keep a dwindling number of small mountain headwater populations, like the one in Muskrat Creek, from disappearing forever.

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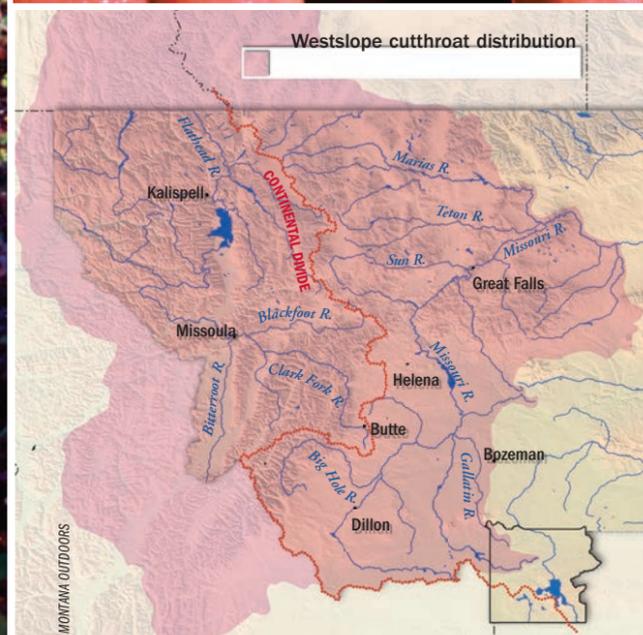


DECLINING NUMBERS

The westslope, Montana’s state fish, is one of two cutthroat subspecies (the other is the Yellowstone) native to the state. The first known written record dates to June 1805, when the Corps of Discovery reported catching and eating a dozen specimens below the Great Falls of the Missouri River. Today, the scientific name of this colorful native—*Oncorhynchus clarki lewisi*—bears the name of its discoverers. In northwestern Montana, westslopes thrived from the upper Bitterroot River north to Canada and northern Idaho. On the other side of the Rockies, the subspecies swam in the upper Missouri River and tributaries as far downstream as the White Cliffs area, where the water

became too warm to support trout. The westslope cutthroat was also indigenous to pockets of central Montana east to the Snowy Mountains, near Lewistown. (The Yellowstone cutthroat trout subspecies historically occurred in the upper Yellowstone River drainage as far east as Miles City.)

The westslope’s range in much of Montana began declining during the late 19th century. Native fish populations were harmed by the introduction of rainbow, brown, and brook trout, combined with fishery overharvest and the environmental effects of mining, logging, and agriculture. Over the past century, the distribution of pure-strain westslope cutthroat has dropped to less than 10 percent of the subspecies’ original range.



SHOCKING RESULTS FWP crews surveying Muskrat Creek (far left) in 2007 for native westslope cutthroat (above) were surprised to find brook trout. Biologists thought they had previously eliminated the non-native species, which outcompetes cutthroat. Removing brookies is one way FWP, federal agencies, and conservation groups are protecting westslope cutthroat, which, despite their name, are also native east of the Continental Divide. Other activities include installing barrier dams to block non-natives.

Many anglers don’t care that westslope numbers have declined, and are more than happy to fish for brown, rainbow, or other non-native species. But according to Bruce Farling, executive director of Montana Trout Unlimited, a growing number of trout fans appreciate catching wild, native cutthroat in an environment where the subspecies has evolved and persisted for thousands of years. “People are coming from all over the country to fish for native cutthroat in Montana,” says Farling. “And a lot of Montanans grew up fishing for cuts and still take a special pleasure in catching them.”

OBSTRUCTIONS: BAD AND GOOD

Though westslope cutthroat are the same fish on either side of the Divide, the conservation threats and challenges differ greatly. Several population on the west side are still robust and occupy more than 50 miles of connected habitat in large river systems such as the Blackfoot, Clark Fork, and Flathead. The primary problem on these waters are dams and other obstructions—from large hydropower facilities to washed-out culverts—that break up what biologists call connectivity. Trout need to move widely in river systems so they can migrate to historic spawning streams and other habitats. This mobility reduces inbreeding and the widespread die-offs caused by massive drought or other severe environmental conditions in local waters. Dam removal, such as the historic dismantling of Milltown Dam now underway at the confluence of the Blackfoot and Clark Fork, restores connectivity.

The conservation challenge is different east of the Divide, where FWP rates the risk of westslope cutthroat extinction for many local populations as “high to extreme.” Brown and rainbow trout dominate the major rivers in this part of Montana. FWP officials acknowledge it would be impractical and unpopular with most anglers for the department to attempt large-scale cutthroat restoration on the Madison, Missouri, and other blue-ribbon waters. Instead, FWP is focusing on just a handful of tributaries. “We’re restoring cuts on a few larger streams such as Cherry Creek and the South Fork of the Judith River,” says Moser, “but for the most part we are currently limited to protecting the small

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pure populations in the headwaters from competition with brook trout and potential hybridization with rainbows.”

Because genetic mixing with rainbow trout is a constant threat to cutthroat populations on the east slope, obstructions are actually viewed favorably there. Lowhead dams, perched culverts, and natural features such as waterfalls prevent rainbows from moving upstream and mixing with pure-strain cutthroat. Some of the obstructions come from unlikely sources. On the Belt Creek drainage near Neihart, for example, historic mine tailings along Carpenter Creek have for more than seven decades created a chemical blockade that stops the upstream movement of brook and rainbow trout. Upstream from the toxic runoff, a remnant westslope population has retained a precarious foothold in the more pristine headwaters.

On Muskrat Creek, Nelson and Moser head downstream to check on a small damlike barrier built in 2003 to prevent other trout species from mixing with cutthroat. “In many situations east of the Divide, if we didn’t have barriers like this one, we wouldn’t have cutts,” Nelson says. They examine the structure to see if the newly discovered brook trout somehow sneaked past. Most likely, the biologists conclude, a few brookies evaded capture when crews removed the non-natives several years ago, or an angler intentionally or accidentally transported the trout over the barrier.

Barriers may help preserve genetic purity and prevent competition from brook trout, but they can also create problems. In addition to breaking connectivity, obstructions isolate small populations and make them vulnerable to inbreeding, poor habitat conditions, or catastrophic events such as floods, fire, or drought. Farling says trout advocates have been arguing over the pros and cons of dams for years. Trout Unlimited urges the U.S. Forest Service to remove barriers such as poorly designed or washed-out road cul-

verts that impede spawning runs. Yet the organization acknowledges that without barriers, some westslope populations would be ruined. “Increasingly, we and public conservation agencies like FWP are looking at the risks and benefits of barriers on a case-by-case basis,” Farling says.

TAILORING ACTIVITIES

Cutthroat conservation on both sides of the Divide got a boost in 2007, when 18 interested parties, including TU and FWP, formally agreed to work cooperatively on restoring and conserving both the westslope and Yellowstone subspecies. In addition to evaluating individual barriers, parties to the agreement are working on projects that remove non-native trout in some waters, improve culvert design to link detached stream segments, and reduce hillside erosion that bleeds egg-smoth-

ering silt into streams. Other projects include raising and stocking cutthroat trout, transplanting cutthroat trout from one stream to another, installing barriers in some streams, and increasing public awareness of threats to the subspecies. Bruce Rich, FWP fisheries manager for southwestern Montana, points out that biologists tailor the various management activities to each specific trout fishery. “Cutthroat restoration is not a one-size-fits-all deal, as some people think,” he says. “It’s different for the two different subspecies, for the fish east and west of the Divide, and a lot of times even from stream to stream.”

Muskrat Creek exemplifies both the rewards and challenges of managing and conserving east slope westslopes. Between 1997 and 2003, FWP crews removed more than 7,700 brook trout upstream from the barrier, mostly small fish less than 6 inches long. Fish removal is time-consuming, and it took electrofishing crews on Muskrat Creek 20 tries over several years before they believed they had removed all the non-natives. The good news was that, as brookies steadily declined, westslopes in the project area naturally increased, from fewer than 100 before

removal efforts to more than 3,000 today. “There’s an almost immediate positive response from westslopes when brook trout are removed,” says Nelson. Muskrat Creek has proven successful enough to become a westslope donor site, providing genetically pure fish for transplanting to other streams. The bad news, of course, was the brookies’ return. “With this type of project, you have to keep checking up on it,” says Nelson.

On some waters where non-natives have completely taken over, FWP removes the fish using the chemical compounds antimycin or rotenone—derivatives of bacteria and tree roots that kill only gill-breathing animals. Applied properly and following EPA-approved label directions, these compounds create little or only a short-term effect on the environment. Nevertheless, some projects have been controversial. At Cherry Creek, southwest of Bozeman, local anglers denounced FWP for killing all the brook and rainbow trout to prepare the stream for cutthroat reintroduction. And in some mountain lakes, environmentalists have criticized the agency for fish removal projects. Moser and other biologists say piscicides are essen-

tial for cutthroat management. “If we lost this tool, we would lose the ability to restore larger and more complex streams,” says Moser. “We’ve found that if people understand the benefits and risks of these projects beforehand, they are far more accepting than if they just hear about it afterward.”

After fish removal, biologists stock pure-strain westslopes or place eggs into in-stream incubators, where the water’s unique chemical characteristics imprint on developing embryos.

Moser and Nelson know they may be fighting a losing battle in some places. Recent DNA studies have revealed that some west-slope populations previously considered pure have been tainted by rainbow hybridization. Record-breaking water temperatures over the past several summers are putting additional stress on struggling cutthroat populations. And then there are the anglers who question whether it is worthwhile to save a mile of cutthroat water. “We hear these fish being called ‘museum species,’” Moser says.

Despite the constant challenges and occasional setbacks, the biologists are committed to doing what they can to conserve and restore a trout subspecies intrinsic to the state’s cul-

tural and natural histories. “Aldo Leopold said that ‘to keep every cog and wheel is the first precaution of intelligent tinkering,’” says Moser. “That’s what we’re trying to do here. We have an obligation to not let these fish disappear just because the restoration work is hard or controversial. Westslope cutts are a part of Montana’s natural heritage.”

The fish also make for great sport in some of the state’s most scenic and isolated settings. After trying to keep up with the two indefatigable biologists for a couple of days as they checked up on various westslope projects, I finally have a chance to do some “research” of my own. Four-weight fly rod in hand, I headed up an enticing stretch of the South Fork of the Judith River a bit downstream from another westslope restoration project. There I catch several rainbows and hybrid cutbows—beautiful fish in their own right, but not what I was hoping for. In five years or so I’ll be back, upstream from a recently installed fish barrier, hoping to land some wild, brilliantly colored westslopes in water where they have flourished since the end of the last Ice Age. And even if I don’t catch any, it will be enough just to know they are there. 🐟



LOOKING FOR LEAKS FWP fisheries biologist Lee Nelson (left) inspects a damlike structure on Muskrat Creek built to keep rainbow and brook trout from moving up into waters containing pure-strain westslope cutthroat trout. He and colleague Dave Moser later conclude that a handful of brookies discovered during a population survey may have escaped earlier attempts to eliminate the non-natives. Nelson says constant monitoring of westslope cutthroat restoration streams is essential to ensure that Montana’s remnant populations continue to survive in their native waters (below). “Just because restoration work is hard or controversial doesn’t mean we shouldn’t do it,” he says. “Westslope cutts are a part of Montana’s natural heritage.”

